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(54) **IMAGE FORMING APPARATUS INTERNALLY PROVIDED WITH SHIELD FOR PREVENTING FOREIGN LIGHT FROM REACHING LIGHT SENSITIVE AREA**

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(52) **U.S. Cl.**
CPC ***G03G 21/1676*** (2013.01); ***G03G 21/1619*** (2013.01); ***G03G 21/1666*** (2013.01)

(58) **Field of Classification Search**
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USPC 399/107, 110, 119, 120
See application file for complete search history.

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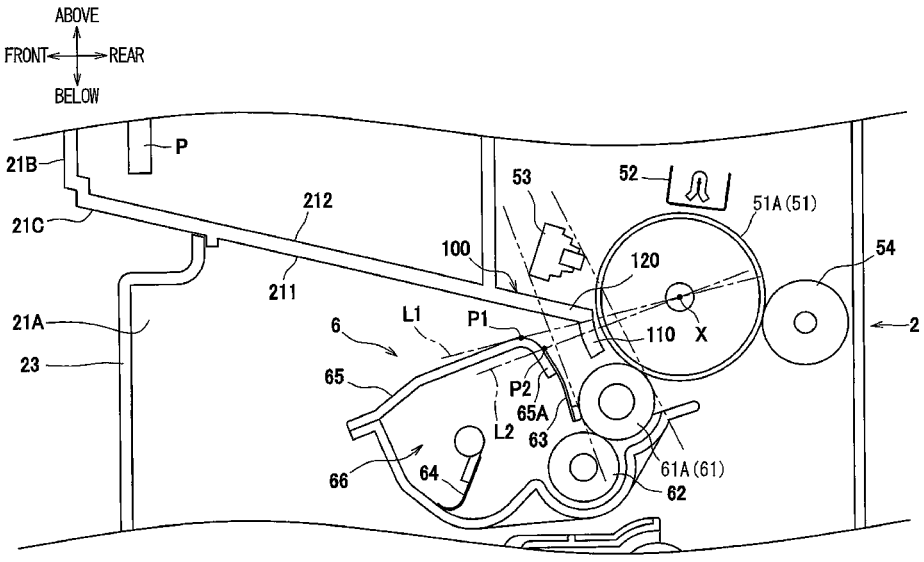
(57) **ABSTRACT**

An image forming apparatus includes a casing, a photosensitive drum, an exposure head, a developing cartridge, and a light shielding member. The photosensitive drum is rotatably disposed inside the casing. The exposure head is configured to expose the peripheral surface of the photosensitive drum to light. The developing cartridge includes a developing roller configured to supply the developer onto the peripheral surface of the photosensitive drum. The developing cartridge is mountable in and dismountable from the casing. The developing cartridge has an uppermost point and is disposed beneath the exposure head when mounted in the casing. The light shielding member has a first portion disposed between the exposure head and the developing roller and intersecting with an imaginary plane defined by inclusion of the axial line of the photosensitive drum and the uppermost point of the developing cartridge.

8 Claims, 8 Drawing Sheets



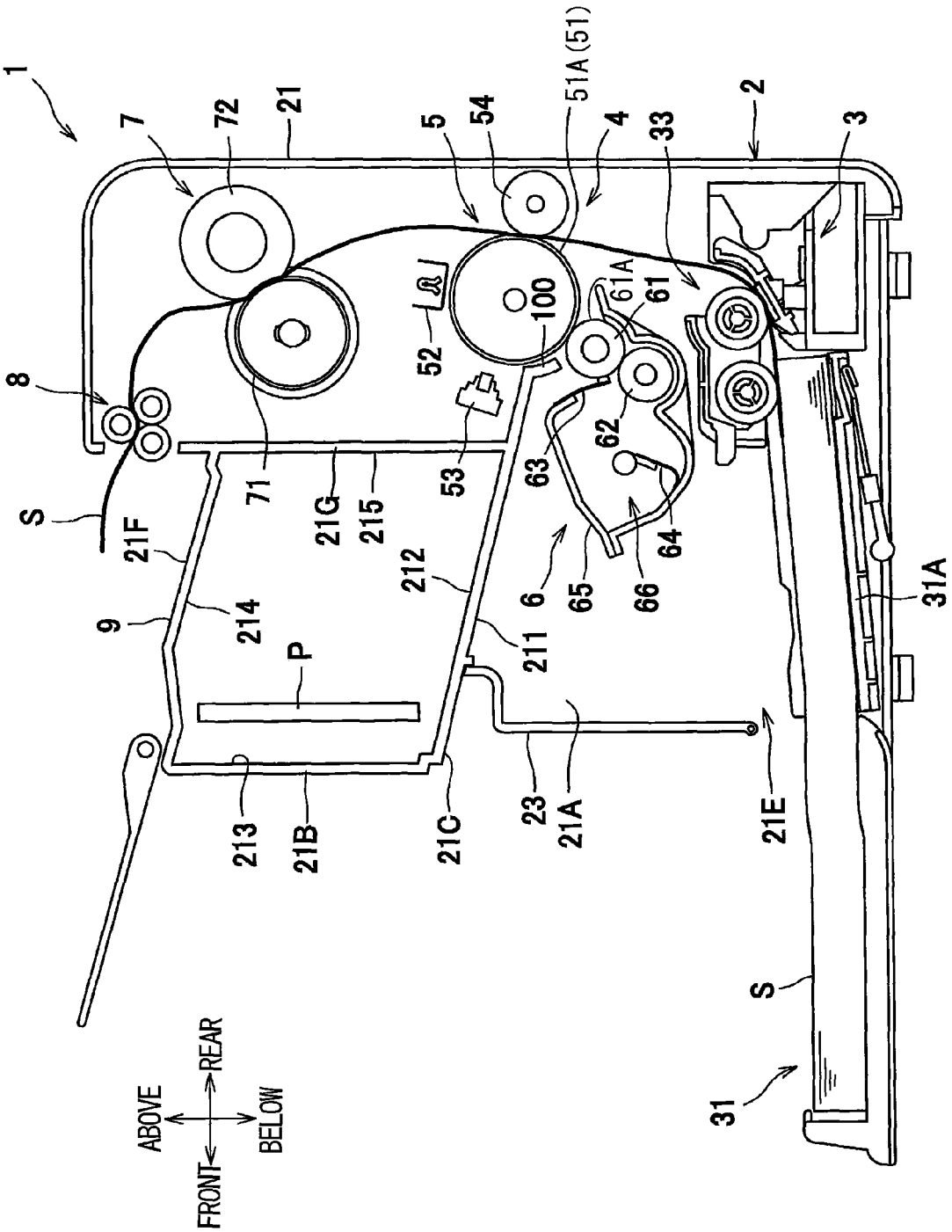

1
7
72
21
5
54
51A (51)
4
33
2
3
8
52
100
61A
61
62
63
53
71
21G
215
212
6
65
66
64
31A
S
21F
9
214
P
211
213
21B
21C
23
21A
21E
S
31
ABOVE
REAR
BELOW
FRONT

FIG. 1

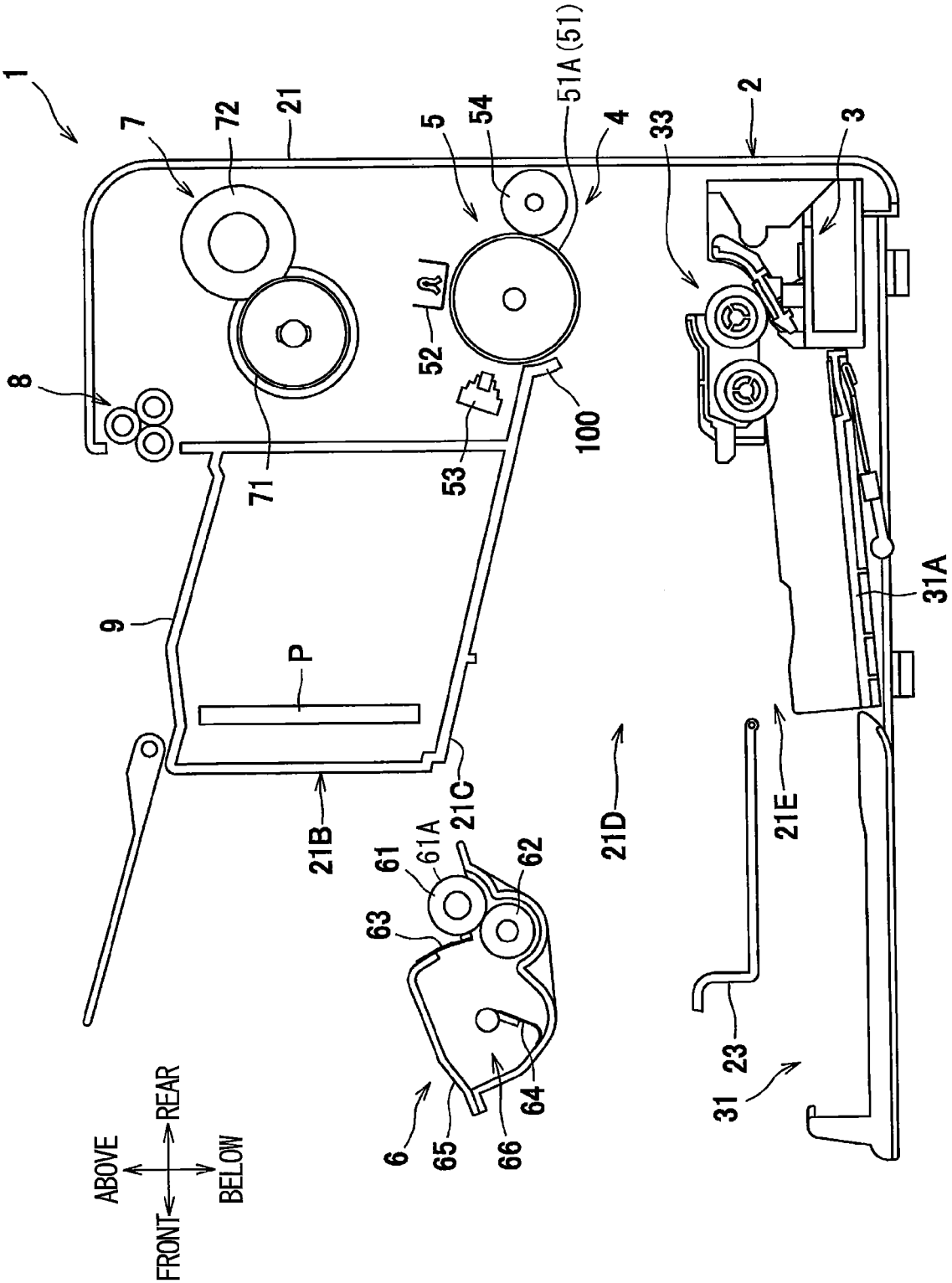

1
7
72
21
5
54
51A (51)
4
33
2
3
8
52
100
71
53
9
P
31A
21B
21C
21D
21E
61
61A
62
63
6
65
66
64
31
23
ABOVE
REAR
FRONT
BELOW

FIG. 2

FIG. 3

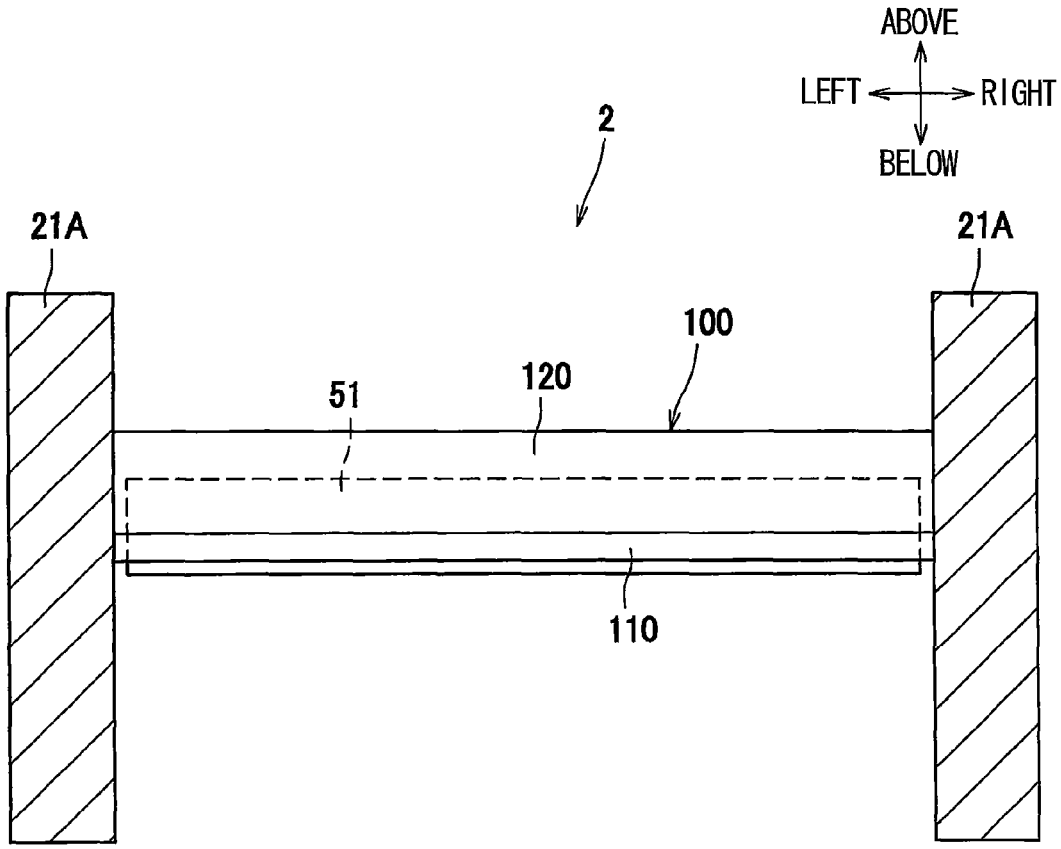
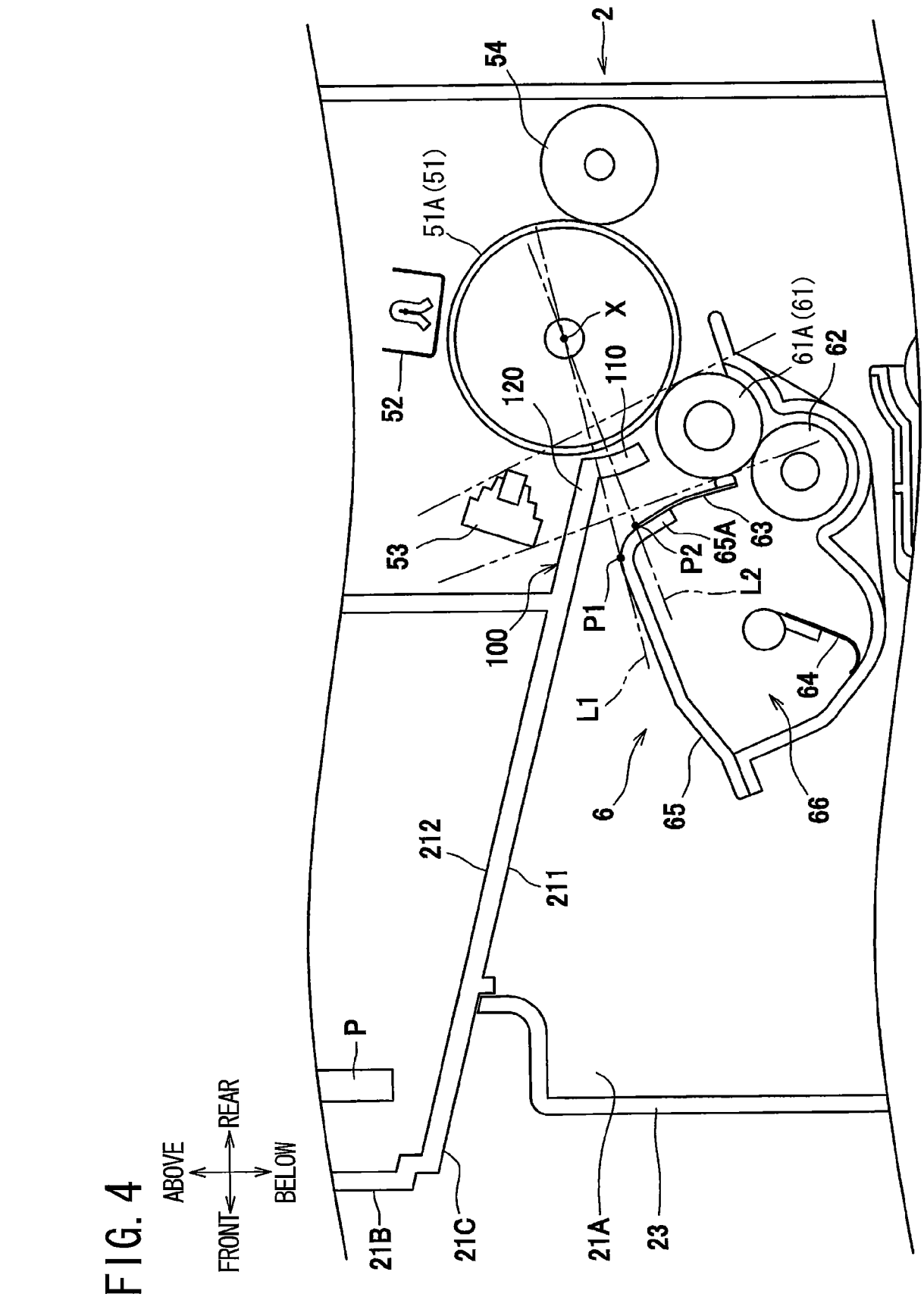


FIG. 4


ABOVE
REAR
FRONT
BELOW
2
54
51A (51)
52
53
120
X
110
61A (61)
62
63
65A
P2
L2
P1
L1
100
64
6
65
66
212
211
P
21B
21C
21A
23

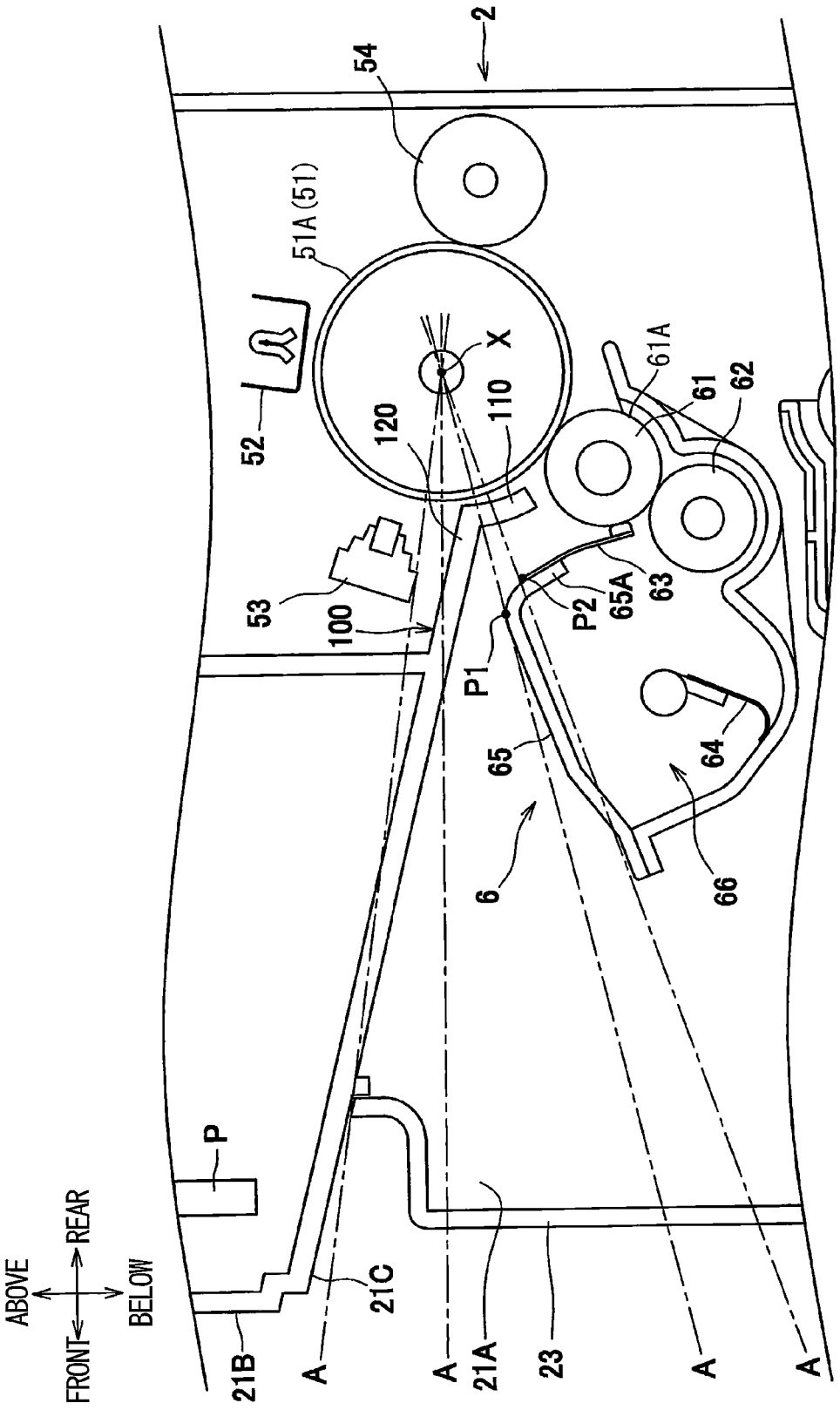
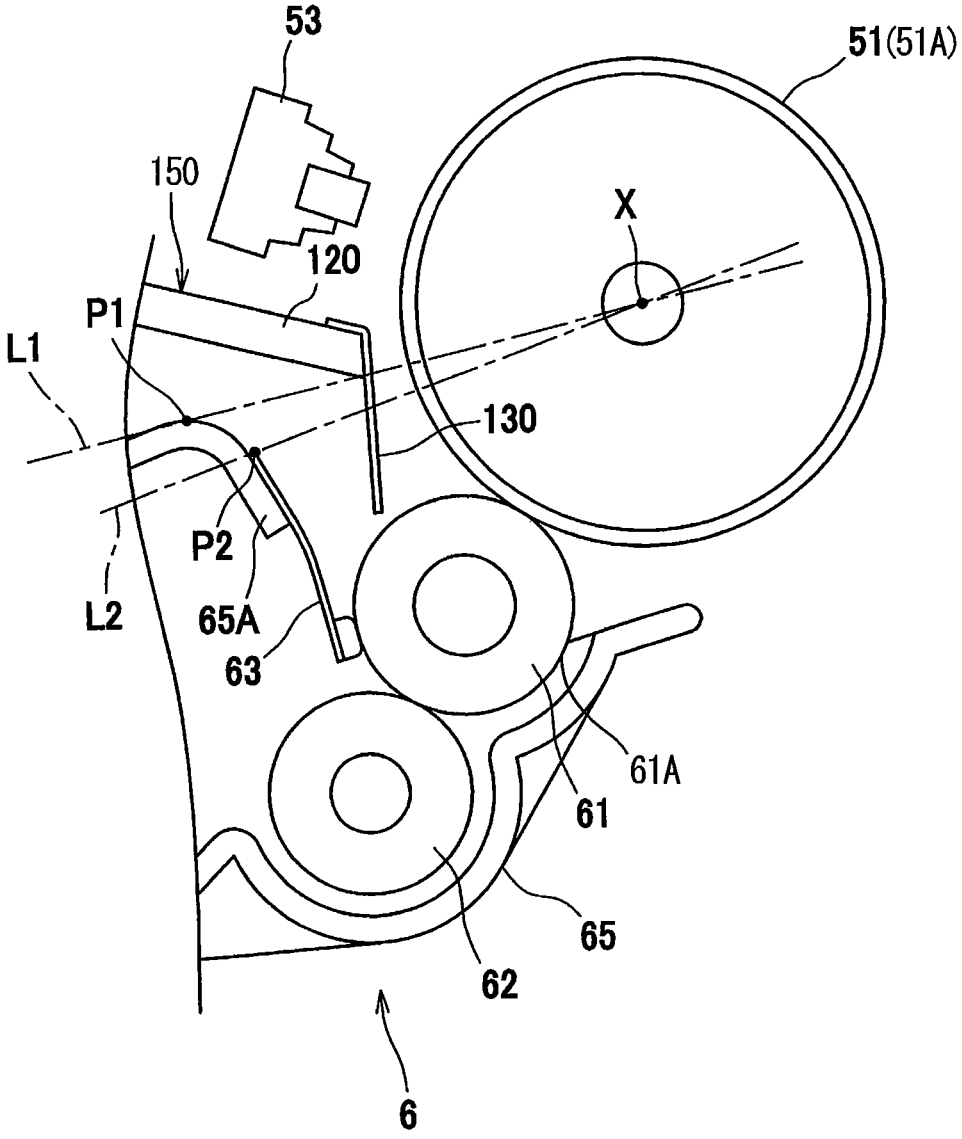

2
54
51A(51)
52
120
110
X
61A
61
62
53
100
P2
65A
63
P1
65
64
6
66
P
21B
21C
A
21A
23
ABOVE
BELOW
FRONT
REAR

FIG. 5

FIG. 6



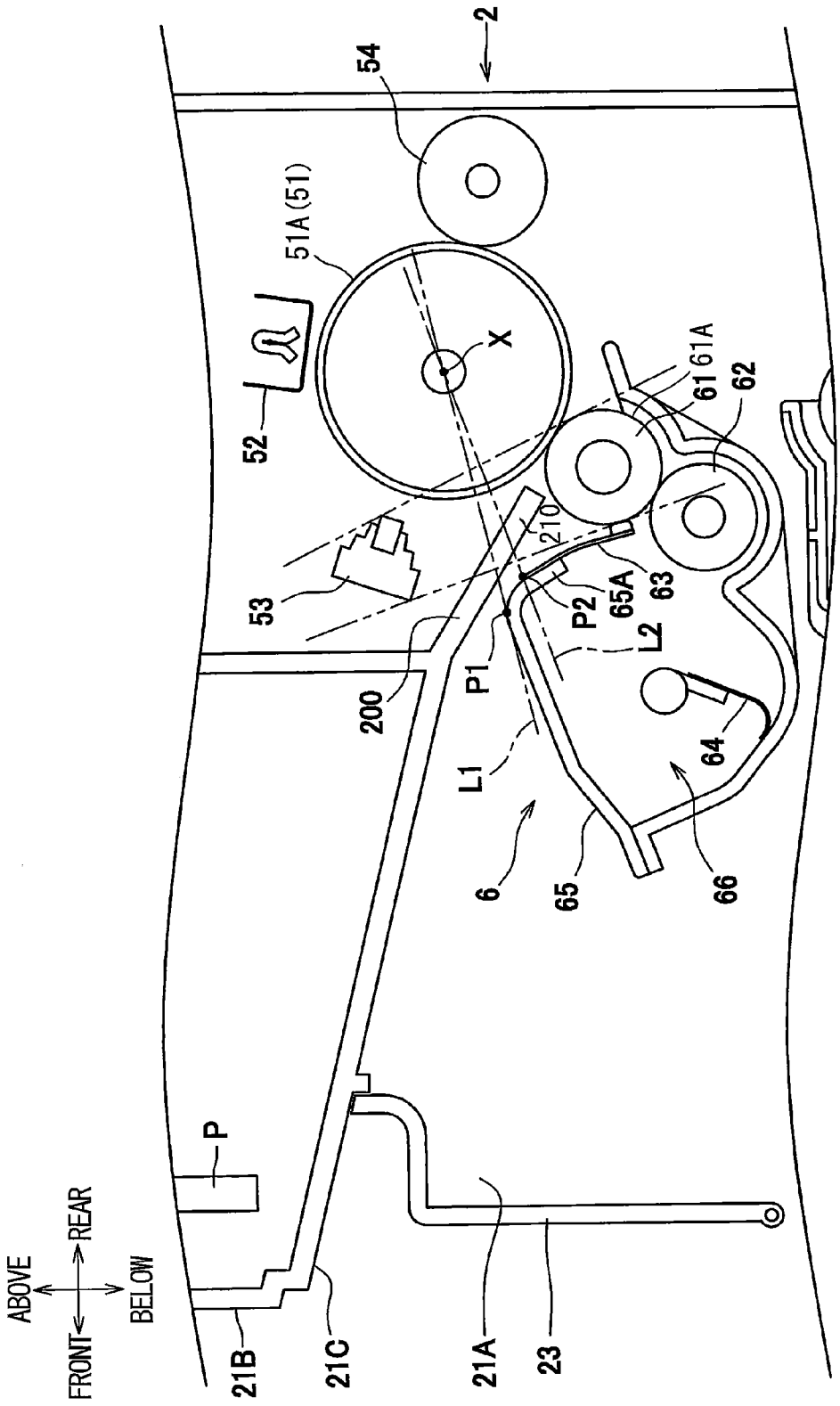

2
54
51A (51)
52
X
61A
61
62
53
210
65A
63
P2
L2
P1
200
L1
64
6
65
66
P
21B
21C
21A
23
ABOVE
REAR
FRONT
BELOW

FIG. 7

FIG. 8

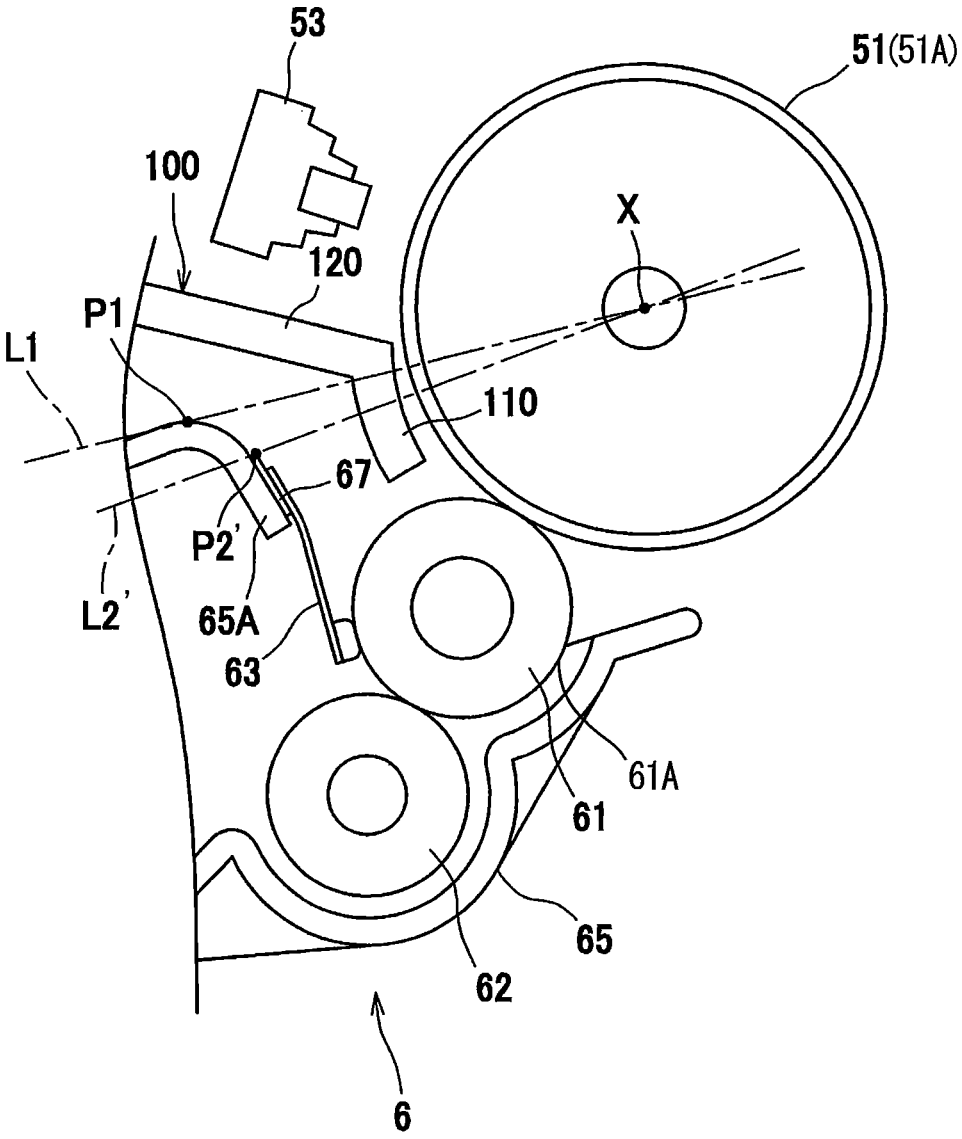


IMAGE FORMING APPARATUS INTERNALLY PROVIDED WITH SHIELD FOR PREVENTING FOREIGN LIGHT FROM REACHING LIGHT SENSITIVE AREA

CROSS REFERENCE TO RELATED APPLICATION

This application claims priority from Japanese Patent Application No. 2013-205191 filed Sep. 30, 2013. The entire content of the priority application is incorporated herein by reference.

TECHNICAL FIELD

The present invention relates to an electrophotographic image forming apparatus including a photosensitive drum.

BACKGROUND

Conventional electrophotographic image forming apparatuses generally include a photosensitive drum, an exposure head and a developing cartridge. The exposure head is provided for exposing the peripheral surface of the photosensitive drum to imaging light. The developing cartridge stores developer to be supplied to the photosensitive drum. Japanese Patent Application Publication No. 2012-168570 discloses an image forming apparatus of the type described above, and shows an arrangement in which the developing cartridge is spaced apart from and disposed below the exposure head.

SUMMARY

With such an arrangement, there is likelihood of accidental exposure of the photosensitive drum with foreign light entering into the apparatus. The foreign light may enter thereinto when strong intensity light, e.g., sunlight, falls on the sidewall of the apparatus. To prevent deterioration of the photosensitive drum, such an accidental exposure of the photosensitive drum needs to be avoided.

In view of the foregoing, it is an object of the invention to provide an image forming apparatus capable of shielding foreign light so as not reach the photosensitive drum.

To achieve the above and other objects, an image forming apparatus is proposed which may include a casing, a photosensitive drum, an exposure head, a developing cartridge, and a light shielding member. The photosensitive drum may be rotatably disposed inside the casing and have a peripheral surface and an axial line. The exposure head may be disposed to face the peripheral surface of the photosensitive drum. The exposure head may be configured to expose the peripheral surface of the photosensitive drum to light. The developing cartridge may include a developing roller. The developing roller may have a peripheral surface on which developer is born and be configured to supply the developer onto the peripheral surface of the photosensitive drum. The developing cartridge may be mountable in and dismountable from the casing. The developing cartridge may have an uppermost point and be disposed beneath the exposure head when mounted in the casing. The light shielding member may have a first portion that is disposed between the exposure head and the developing roller and intersects with an imaginary plane defined by inclusion of the axial line of the photosensitive drum and the uppermost point of the developing cartridge.

BRIEF DESCRIPTION OF THE DRAWINGS

The particular features and advantages of the invention as well as other objects will become apparent from the following description taken in connection with the accompanying drawings, in which:

FIG. **1** is a schematic cross-sectional view showing a laser printer according to one embodiment of the present invention;

FIG. **2** is a schematic cross-sectional view showing the laser printer from which a developing cartridge is removed;

FIG. **3** is a cross-sectional view showing a side frame and a light shielding wall;

FIG. **4** is an enlarged diagram showing a light shielding wall and components disposed therearound;

FIG. **5** is an explanatory diagram showing positional relationships among a front cover, the light shielding wall, and the developing cartridge;

FIG. **6** is a cross-sectional view showing a light shielding wall of a laser printer according to a first modification of the present invention;

FIG. **7** is a cross-sectional view showing a light shielding wall of a laser printer according to a second modification of the present invention; and

FIG. **8** is a cross-sectional view showing a developing cartridge of a laser printer according to a third modification of the present invention.

DETAILED DESCRIPTION

One embodiment of the present invention will be described with reference to the accompanying drawings. The embodiment pertains to a laser printer as example of image forming apparatuses. In the following description, the terms "upward", "downward", "upper", "lower", "above", "below", "beneath" and the like will be used throughout the description assuming that the laser printer is disposed in an orientation in which it is intended to be used as shown in FIG. **1**.

As shown in FIG. **1**, the laser printer **1** includes a main unit **2**; a sheet feed section **3** for supplying a sheet of paper S; an image forming section **4** for forming images on the sheet of paper S; and a circuit board P. The main unit **2** includes a housing **21** serving as an example of a casing, and a front cover **23** serving as an example of a cover. The housing **21** includes left and right side frames **21**A and a front wall **21**B. The side frames **21**A are disposed-in spaced apart in the right and left direction and in confronting relation with each other.

The image forming section **4** is interposed between the side frames **21**A. The front wall **21**B is coupled to the front end portions of the left and right side frames **21**A. In the coupled state, the lower end of the front wall **21**B is positioned above the lower end of each of the pair of side frames **21**A. Specifically, the lower end of the front wall **21**B is nearly the same in a vertical level as an axial line of a photosensitive drum **51** described later. The front side of the housing **21** is formed with an opening **21**C at the lower portion thereof. Specifically, the opening **21**C is defined by the pair of side frames **21**A and the front wall **21**B and defined below the front wall **21**B.

The front cover **23** is provided for covering an upper part of the opening **21**C. The front cover **23** is hinged to the housing **21** to be pivotally movable between an upstanding posture and a horizontally laid posture. When the front cover **23** is in the upstanding posture, the upper part of the opening **21**C is covered whereas when the front cover **23** is in the horizontally laid posture, the upper part of the opening **21**C is exposed.

The front cover **23** partitions the opening **21**C into a developing cartridge mounting/dismounting port **21**D and a sheet insertion port **21**E (see FIG. **2**). The former port **21**D is positioned above the lower end of the front cover **23**, and the latter port **21**E below the lower end of the front cover **23**.

The sheet feed section **3** is disposed in the bottom portion of the main unit **2**, and includes a sheet feed tray **31** and a sheet feed mechanism **33**. The sheet feed tray **31** receives a sheet of paper S inserted through the sheet insertion port **21**E. The sheet feed mechanism **33** is configured to feed the uppermost sheet of paper S stacked on the sheet feed tray **31** toward the image forming section **4**. The sheet feed tray **31** is horizontally elongated to protrude out of the housing **21** through the sheet insertion port **21**E. The sheet feed tray **31** is provided with a sheet pressing plate **31**A disposed in the bottom portion of the housing **21**.

In the sheet feed section **3**, a stack of sheets of paper S on the sheet feed tray **31** is upwardly urged against a roller included in the sheet feed mechanism **33** by the sheet pressing plate **31**A. The uppermost sheet of paper S is fed toward the image forming section **4** by virtue of the sheet feed mechanism **33**.

The image forming section **4** includes a process unit **5** and a thermal fixing unit **7**. The process unit **5** includes the photosensitive drum **51**, a charger **52**, an exposure head **53**, a transfer roller **54**, and a developing cartridge **6**. The photosensitive drum **51** is disposed within the main unit **2** and above the sheet feed mechanism **33**. The photosensitive drum **51** is cylindrically elongated and rotatable about the axial line X. The charger **52** is disposed above the photosensitive drum **51**. The charger **52** extends in an axial direction (or widthwise direction) of the photosensitive drum **51** and faces the latter to uniformly charge the peripheral surface of the photosensitive drum **51**.

The exposure head **53** is disposed at the front side of the photosensitive drum **51**. That is, the exposure head **53** is interposed between the front cover **23** and the photosensitive drum **51**. The exposure head **53** is also elongated to extend in the axial direction of the photosensitive drum **51** and has a tip end portion facing the peripheral surface of the photosensitive drum **51**. Light is emitted from the tip end portion of the exposure head **53**. Specifically, a plurality of light emitting diodes (LEDs) is arrayed in the widthwise direction on the tip end portion of the exposure head **53**. The plurality of LEDs selectively emits light in response to image data, thereby exposing the precharged surface of the photosensitive drum **51** to light and forming an electrostatic latent image thereon. The transfer roller **54** is disposed at the rear side of the photosensitive drum **51** and is closely positioned with respect to the photosensitive drum **51**.

As can be understood from FIG. **2**, the main unit **2** is configured so that the developing cartridge **6** can be mounted therein or dismounted therefrom through the developing cartridge mounting/dismounting port **21**D exposed when the front cover **23** is brought to the horizontally laid posture.

Referring back to FIG. **1**, the developing cartridge **6** mounted in the main unit **2** is disposed below the exposure head **53**. The developing cartridge **6** includes a developing roller **61**, a developer supplying roller **62**, a developer thickness regulating blade **63**, an agitator **64**, and a cartridge frame **65** for supporting those components of the developing cartridge **6**. The cartridge frame **65** is a cylindrical-shape container extending in the widthwise direction and has a toner container **66** in which toner, one example of developer, is stored. The cartridge frame **65** supports the developing roller **61**, toner supplying roller **62** and developer thickness regulating blade **63** at the rear side of the toner container **65**.

In operation, the peripheral surface of the photosensitive drum **51** is uniformly charged by the charger **52** while the drum **51** is rotating. Then, the precharged surface of the photosensitive drum **51** is exposed to imaging light by the exposure head **53**. Electrical potential at the exposed portions is lowered, resulting in formation of an electrostatic latent image on the photosensitive drum **51**.

Toner stored in the toner container **66** is agitated by the agitator **64**. While agitating the toner with the agitator **64**, toner is carried onto the developer supplying roller **62**, and then relayed to the developing roller **61**. In accordance with rotations of the developing roller **61**, toner on the developing roller **61** is subjected to thickness regulation by the developer thickness regulation blade **63**, so that the developing roller **61** bears a toner layer with a uniform thickness on its peripheral surface. That is, the toner thickness regulating blade **63** regulates the thickness of the toner layer born on the peripheral surface of the developing roller **61**.

Toner born on the developing roller **61** is supplied onto the peripheral surface of the photosensitive drum **51**, thereby developing the electrostatic latent image. Through such a developing process, a visible toner image is formed on the photosensitive drum **51**. The toner image on the photosensitive drum **51** is then transferred onto the sheet of paper S passing through a nip between the photosensitive drum **51** and the transfer roller **54**.

The thermal fixing unit **7** is disposed above the process unit **5** and includes a heat roller **71** and a backup roller **72**. The heat roller **71** has a heat source, such as halogen lamp, in its interior. The heat roller **71** and the backup roller **72** nip and convey the sheet of paper S. The backup roller **71** is disposed at a position diagonally upside with respect to the heat roller **71**. The thermal fixing unit **7** thermally fixes the toner image deposited on the sheet of paper S when the latter passes through the nip between the heat roller **71** and the backup roller **72**. The sheet of paper S with the toner image thermally fixed is then conveyed toward a set of discharge rollers **8** disposed in a downstream side of the thermal fixing unit **7** with respect to a sheet conveying direction. The set of discharge rollers **8** then conveys the sheet of paper S onto a discharge tray **9** disposed above the main unit **2**.

The circuit board P is configured to electrically power the image forming section **4** and any other electrical sections and disposed at a rear side position of the front wall **21**B.

A light shielding wall **100** serving as an example of a light shielding member is provided between the opening **21**C and the photosensitive drum **51**. In other words, the opening **21**C is positioned at the front side of the light shielding wall **100**, and the photosensitive drum **51** at the rear side of the light shielding wall **100**. The laser printer **1** or the housing **21** has an upper wall **21**F and a partitioning wall **21**G that is provided between the circuit board P and the exposure head **53**.

As shown in FIG. **4**, the light shielding wall **100** has a generally L-shaped cross-section and includes a first segmental wall **110** and a second segmental wall **120**. The first segmental wall **110** is provided to cover a part of the photosensitive drum **51** where foreign light which may enter from the opening **21**C and reach the photosensitive drum **51**. The first segmental wall **110** extends along the periphery of the photosensitive drum **51** as viewed in cross-section. The second segmental wall **120** extends frontward from one end of the first segmental wall **110** and is positioned below the exposure head **53** and above the developing roller **61**. The second segmental wall **120** is provided for covering the exposure head **53** or partitioning between the exposure head **53** and the developing roller **61**.

The vertical position of the second segmental wall **120** may be varied, provided that the second segmental wall **120** is in between the exposure head **53** and the developing roller **61**, and the free end of the first segmental wall **110** is not brought into contact with the developing roller **61**. Possible vertically variable range is limited such that the root portion of the second segmental wall **120** near the first segmental wall **110** falls within a space surrounded by two two-dotted-chain lines shown in FIG. **4**.

As shown in FIG. **3**, the light shielding wall **100** is bridged between a pair of side frames **21**A. Both end faces of the light shielding wall **100** are secured to the respective side frames **21**A. The light shielding wall **100** needs to have a light shielding property. To this effect, it is desirable that the light shielding wall **100** have a thickness enough to prevent light from passing therethrough and also the light shielding wall **100** have a black color surface.

As best shown in FIG. **4**, the first segmental wall **110** extends generally vertically and its lower end is positioned in a triangular space surrounded by peripheral surfaces of both the photosensitive drum **51** and the developing roller **61**.

Next, an arrangement of the developing cartridge **6** according to the embodiment will be described in detail.

The upper side cartridge frame **65** constitutes an upper wall of the toner container **66**. The rear part of the upper side cartridge frame **65** is downwardly bent from the point P1 and used as a fixing wall **65**A for fixing the thickness regulating blade **63**. The point P1 is the uppermost position of the developing cartridge **6**. In a state where the developing cartridge **6** is mounted in the main unit **2**, the fixing wall **65**A is positioned ahead of the photosensitive drum **51**, and the point P1 is higher than the developing roller **61**.

The thickness regulating blade **63** has one end fixedly secured to the fixing wall **65**A. The blade **63** extends downward to be positioned at the front side of the developing roller **61** so that the other end thereof is in contact with the peripheral surface of the developing roller **61**.

Next, a positional relation between the light shielding wall **100** and the components disposed therearound will be described while referring to FIG. **4**.

As shown in FIG. **4**, the first segmental wall **110** of the light shielding wall **100** intersects with a plane L1 defined by inclusion of the axial line X of the photosensitive drum **51** and the point P1 where is the uppermost position of the developing cartridge **61**. Further, the first segmental wall **110** also intersects with a plane L2 defined by inclusion of the axial line X of the photosensitive drum **51** and the upper end P2 of the thickness regulating blade **63**.

The second segmental wall **120** of the light shielding wall **100** is continuous from the upper end of the first segmental wall **110** and extends frontward while passing through a space between the exposure head **53** and the developing roller **61**. The frontmost end portion of the second segmental wall **120** is positioned below the circuit board P and above the front cover **23**. When the front cover **23** is closed, the same is brought into engagement with the second segmental wall **120**. The second segmental wall **120** has an inner surface **211** facing downward to confront the developing cartridge **6** and an outer surface **212** facing upward to confront the circuit board P.

As shown in FIG. **5**, an imaginary plane A defined by inclusion of the axial line X of the photosensitive drum **51** and an arbitrarily selected point on the front cover **23** intersects with at least one of the first segmental wall **110**, the second segmental wall **120**, and the developing cartridge **6**.

Referring back to FIG. **1**, the upper wall **21**F extends rearward from the upper end of the front wall **21**B to the position beneath the set of discharge rollers **8**. The discharge tray **9** is configured in a part of the upper wall **21**F. The partitioning wall **21**G extends downward from the rear end of the upper wall **21**F and coupled to the second segmental wall **120** of the light shielding wall **100**. The circuit board P is disposed in a space defined by the front wall **21**B, the second segmental wall **120**, the upper wall **21**F and the partitioning wall **21**G. In other words, each of the inner side surface **213** of the front wall **21**B, the inner side surface **214** of the upper wall **21**F, the front side surface **215** of the partitioning wall **210**, and the upper side surface **212** of the second segmental wall **120** is in confronting relation with the circuit board P.

With the laser printer **1** having an arrangement described above, strong intensity light falling on the front face of the main unit **2** may enter into the main unit **2** if the front cover **23** is not so thick as to prevent the light from passing therethrough or if the front cover **23** is so colored as to allow the light to pass therethrough. Nevertheless, the light sensitive area in the laser printer **1** is not adversely affected by the light entered into the main unit **2** because such foreign light is blocked by the light shielding wall **100** formed between the exposure head **53** and he developing roller **61**. The light shielding wall **100** prevents the light entering into the main unit **2** from reaching the peripheral surface of the photosensitive drum **51**. As such, accidental or unwanted exposure of the photosensitive drum **51** by the foreign light can be effectively prevented.

As shown in FIG. **4**, having the first segmental wall **110** disposed in the triangular space formed between the photosensitive drum **51** and the developing cartridge **6**, the light shielding wall **100** is capable of shielding the light entering from positions beneath the uppermost point P1 of the developing cartridge **6**, preventing the photosensitive drum **51** from being exposed to foreign light.

Further, the second segmental wall **120** of the light shielding wall **100** extends to the upper part of the front cover **23** and engages the front wall **21**B, so that light entered into the main unit **2** from the upper side thereof can also be blocked.

As shown in FIG. **5**, the imaginary plane A defined by inclusion of the axial line X of the photosensitive drum **51** and an arbitrarily selected point on the front cover **23** intersects with at least one of the first segmental wall **110**, the second segmental wall **120** and the developing cartridge **6**. This means that the light passing through the front cover **23** is shielded by any one of the first segmental wall **110**, the second segmental wall **120** and the developing cartridge **6**. As such, the photosensitive drum **51** is prevented from being exposed to foreign light.

The provision of the light shielding wall **100** is advantageous in that the exposure head **53** is prevented from being polluted with toner scattered when toner is scraped off from the developing roller **61** by the thickness regulating blade **63**, because the second segmental wall **120** of the light shielding wall **100** is disposed below the exposure head **53** and above the developing roller **61** and the thickness regulating blade **63**.

Furthermore, the provision of the second segmental wall **120** of the light shielding wall **100** serves to protect the exposure head **53** so as not to impinge against the developing frame **65** and/or developing roller **61** when the developing cartridge **6** is mounted in or dismounted from the main unit **2**.

Although the present invention has been described with respect to a specific embodiment, it will be appreciated by one skilled in the art that a variety of changes and modifications may be made without departing from the scope of the invention. In the following description regarding various modifications, the same or corresponding components as those of the laser printer **1** according to the above-described embodi-

ment will be denoted by the same reference numerals, and duplicating description thereof will be omitted.

While in the above-described embodiment, the light shielding wall **100** is configured of the first and second segmental walls **110**, **120** in which the first segmental wall **110** extends to the second segmental wall **120** to be integral with the latter, the structure of the light shielding wall **10** is not limited to such a configuration. For example, as shown in FIG. **6**, a light shielding member **150** may be used as the light shielding member instead of the light shielding wall **100**. The light shielding member **150** includes the second segmental wall **120** and a light shielding film **130** (first segmental wall) attached to the rear end of the second segmental wall **120**. The light shielding film **130** generally extends along the periphery of the photosensitive drum **51** and disposed in a triangular space formed between the photosensitive drum **51** and the developing roller **61**. The triangular space referred to herein is defined by the peripheral surfaces of the photosensitive drum **51** and the developing roller **61**, and a tangential line connecting the photosensitive drum **51** and the developing roller **61**. Of the two triangular spaces as defined above, the one in which the light shielding film **130** is disposed is at the side of the light shielding member **150**. The light shielding member **150** as shown in FIG. **6** has a foreign light shielding capability as in the above-described embodiment and is effective in blocking the foreign light from reaching the photosensitive drum **51** and hence preventing the photosensitive drum **51** from being exposed to the foreign light.

In the above-described embodiment, the light shielding wall **100** configured of the first and second segmental walls **110**, **120** is generally L-shaped in cross-section. However, the shape of the light shielding wall may not necessarily be L-shaped but be such a shape as shown in FIG. **7** in which the modified light shielding wall is denoted by reference numeral **200**. The light shielding wall **200** serving as an example of the light shielding member straightly extends diagonally downward toward the photosensitive drum **51** but the rear end portion thereof extends more diagonally downward than the remaining part of the light shielding wall **200**. An end portion **210** of the light shielding wall **200** separates the exposure head **53** from the developing roller **61** and serves as a bottom cover of the exposure head **53**. A part of the end portion **210** of the light shielding wall **200** is disposed in the triangular space formed between the photosensitive drum **51** and the developing roller **61**.

The light shielding plate **200** as shown in FIG. **7** has also a foreign light shielding capability as attained in the above-described embodiment. Also, the light shielding wall **200** serves to protect the exposure head **61** so that the developing frame **65** and/or developing roller **61** does not accidentally impinge against the exposure head **61** when developing cartridge **6** is mounted in or dismounted from the main unit **2**.

In the above-described embodiment, the second segmental wall **120** extends frontward above the front cover **23**. The second segmental wall **120** may not be so elongated but be provided only between the exposure head **53** and the developing roller **61**. If the second segmental wall **120** is modified in such a manner, it is desirable to provide in the front part of the main unit **2** a light shielding member for shielding the light entering from the upper part of the main unit **2**.

In the above-described embodiment, the uppermost end of the fixing wall **65**A to which the thickness regulating blade **63** is fixedly secured is set to be in coincidence with the uppermost position P1 of the developing cartridge **6**. However, the uppermost position P1 of the developing cartridge **6** may be in any other position but may be determined depending upon the configuration of the developing cartridge **6** and/or the posture of the developing cartridge **6** mounted in the main unit **2**.

The above-described embodiment exemplifies the thickness regulating blade **63** as means for regulating the thickness of the toner layer deposited on the developing roller **61** and describes the position P2 of the thickness regulating blade **63** as being the uppermost position of the thickness regulating member. However, the shape and structure of the thickness regulating blade **63** is not limited to that shown and described. For example, as shown in FIG. **8**, a thickness regulating assembly may be used which includes a thickness regulating blade **63** and a support member **67** for supporting the base end portion of the thickness regulating blade **63**. The support member **67** is fixedly secured to the fixing wall **65**A of the developing frame **65**. The uppermost end of the support member **67** is positioned higher than the uppermost end position of the thickness regulating blade **63**. If, however, the uppermost end of the support member **67** can be regarded as being in coincidence with the uppermost end position P2' of the thickness regulating blade **63**, a plane L2' defined by inclusion of the uppermost end position P2' and axial line X of the photosensitive drum **51** may intersect with the first segmental wall **110**.

What is claimed is:

1. An image forming apparatus comprising:

a casing;

a photosensitive drum rotatably disposed inside the casing, the photosensitive drum having a peripheral surface and an axial line;

an exposure head disposed to face the peripheral surface of the photosensitive drum, the exposure head being configured to expose the peripheral surface of the photosensitive drum to light;

a developing cartridge including a developing roller, the developing roller having a peripheral surface on which developer is born and being configured to supply the developer onto the peripheral surface of the photosensitive drum, the developing cartridge being mountable in and dismountable from the casing, the developing cartridge having an uppermost point and being disposed beneath the exposure head when mounted in the casing; and

a light shielding member having a first portion that is disposed between the exposure head and the developing roller and intersects with an imaginary plane defined by inclusion of the axial line of the photosensitive drum and the uppermost point of the developing cartridge,

wherein when the developing cartridge is mounted in the casing, the first portion of the light shielding member is disposed between the exposure head and the developing roller and intersects with an imaginary plane defined by inclusion of the axial line of the photosensitive drum and the uppermost point of the developing cartridge.

2. The image forming apparatus according to claim **1**, wherein the developing cartridge further includes a thickness regulating member in contact with the peripheral surface of the developing roller and configured to regulate a thickness of developer layer born on the peripheral surface of the developing roller, the thickness regulating member having an uppermost point;

wherein the first portion of the light shielding member further intersects with an imaginary plane defined by inclusion of the uppermost point of the thickness regulating member and the axial line of the photosensitive drum.

3. The image forming apparatus according to claim **2**, wherein the light shielding member comprises the first por-

tion and a second portion, the first portion being generally extending along the peripheral surface of the photosensitive drum, and the second portion extending from the first portion and covering the exposure head.

4. The image forming apparatus according to claim **3**, wherein the light shielding member is general L-shaped in cross-section.

5. The image forming apparatus according to claim **3**, wherein the first portion comprises a light shielding film.

6. The image forming apparatus according to claim **1**, wherein the casing has an opening in a position opposite the photosensitive drum with respect to the light shielding member;

wherein the image forming apparatus further comprises a cover configured to cover and expose the opening.

7. The image forming apparatus according to claim **1**, wherein the light shielding member comprises a wall.

8. The image forming apparatus according to claim **1**, wherein the light shielding member is secured to the casing.

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